COMPLETE LISTING OF CLAIMS

Please cancel claims 1 and 29 without prejudice. Please rewrite claims 2 and 30 as indicated below.

Claim 1. (Cancelled)

2. (Currently amended) ~~The system of Claim 1~~ A system for efficiently employing a quick paging channel signal to determine the presence of a forthcoming primary paging channel signal in a wireless communications system employing a quick paging channel and a primary paging channel comprising:
    first means for calculating a first decision parameter representative of a quality of a signal environment through which said quick paging channel is propagating;
    second means for calculating a second decision parameter representative of a value of said quick paging channel signal; and
    third means for indicating, based on said first decision parameter and said second decision parameter, the presence or absence of an immediately forthcoming page message on said primary paging channel;
    wherein said first decision parameter is based on a pilot signal and a carrier signal to interference ratio associated with said quick paging channel signal.

3. (Original) The system of Claim 2 wherein said second decision parameter is based on a combination of said quick paging channel signal and said pilot signal.

4. (Original) The system of Claim 3 wherein said second decision parameter is further based on energies associated with said quick paging channel signal and said pilot signal.

5. (Original) The system of Claim 4 further including fourth means for processing said forthcoming page message in response to an indication provided by said third means indicating the presence of a forthcoming page on said primary paging channel.

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6. (Original) The system of Claim 5 further including fifth means for establishing a traffic channel in accordance with said forthcoming page message.

7. (Original) The system of Claim 6 wherein said third means includes sixth means for comparing said first decision parameter to a first threshold and selectively activating said fourth means when said first decision parameter is approximately less than said first threshold.

8. (Original) The system of Claim 7 wherein said third means includes seventh means for comparing said second decision parameter to a second threshold when said first decision parameter is approximately greater than said first threshold.

9. (Original) The system of Claim 8 wherein said third means includes eighth means for selectively activating said forth means when said second decision parameter is greater than said second threshold.

10. (Original) The system of Claim 9 wherein said third means includes means for powering down a receiver section of a wireless communications device containing said system if said second decision parameter is approximately less than said second threshold.

11. (Original) The system of Claim 10 wherein said first decision parameter is specified by the following equation:

$$CSI = \left(\frac{E_{pilot}}{\hat{I}o}\right)_{combined} = \frac{E_{pilot1}}{\hat{I}_{o1}} + \frac{E_{pilot2}}{\hat{I}_{o2}},$$

where CSI and $\left(\frac{E_{pilot}}{\hat{I}o}\right)_{combined}$ represent said combined carrier signal to interference ratio; $\frac{E_{pilot1}}{\hat{I}_{o1}}$ represents the pilot energy to interference ratio associated with said first quick paging symbol; and $\frac{E_{pilot2}}{\hat{I}_{o2}}$ represents the pilot energy to interference ratio associated with said second quick paging symbol, where E_{pilot1} and E_{pilot2} represent pilot signal energy associated with said

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first symbol and said second symbol, respectively; and $\hat{I}_{o1}$ and $\hat{I}_{o2}$ are estimates of the total energy of said received signal associated with said first symbol and said second symbol, respectively.

12. (Original) The system of Claim 10 wherein said second decision parameter is specified by the following equation:

$$D = \frac{QP_1 + QP_2}{E_{pilot1} + E_{pilot2}},$$

where QP_1 is either dot_1, $cross_1$, or $dot_1 + cross_1$; QP_2 is either dot_2, $cross_2$, or $dot_2 + cross_2$; E_{pilot1} represents energy associated with said pilot signal that is associated with said first quick paging symbol; and E_{pilot2} represents energy associated with said pilot signal that is associated with said first quick paging symbol.

13. (Original) A system for selectively demodulating a primary paging channel in a wireless communications system based on a quick paging channel comprising:

first means for extracting pilot signal and a quick paging signal from a received signal, said quick paging signal having a slot with a first quick paging symbol and a second quick paging symbol;

second means for estimating pilot signal strengths associated with said first quick paging symbol and said second quick paging symbol;

third means for computing page energies and pilot energies associated with said first and second quick paging symbols;

fourth means receiving and demodulating a forthcoming primary paging signal; and

fifth means for selectively activating said fourth means, based on said pilot signal strengths, said page energies, said pilot energies, said pilot signal, and said paging signal.

14. (Original) The system of Claim 13 wherein said signal strengths are carrier signal to interference ratios.

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15. (Original) The system of Claim 14 wherein said fifth means includes means for calculating a combined carrier signal to interference ratio based on said carrier signal to interference ratios.

16. (Original) The system of Claim 15 wherein said combined carrier signal to interference ratio is calculated in accordance with the following equation:

$$CSI = \left(\frac{E_{pilot}}{\hat{I}o}\right)_{combined} = \frac{E_{pilot1}}{\hat{I}_{o1}} + \frac{E_{pilot2}}{\hat{I}_{o2}},$$

where CSI and $\left(\frac{E_{pilot}}{\hat{I}o}\right)_{combined}$ represents said combined carrier signal to interference ratio; $\frac{E_{pilot1}}{\hat{I}_{o1}}$ represents the pilot energy to interference ratio associated with said first quick paging symbol; and $\frac{E_{pilot2}}{\hat{I}_{o2}}$ represents the pilot energy to interference ratio associated with said second quick paging symbol, where E_{pilot1} and E_{pilot2} represent pilot signal energy associated with said first symbol and said second symbol, respectively; and $\hat{I}_{o1}$ and $\hat{I}_{o2}$ are estimates of the total energy of said received signal associated with said first symbol and said second symbol, respectively.

17. (Original) The system of Claim 16 wherein said fifth means includes erasure means for comparing said combined carrier signal to interference ratio to an erasure threshold and providing an erasure signal in response thereto.

18. (Original) The system of Claim 16 wherein said fifth means includes means for activating said fourth means when said erasure signal indicates that said combined carrier signal to interference ratio is approximately below said threshold.

19. (Original) The system of Claim 18 wherein said fifth means includes detection means for computing a decision metric (D) based on said pilot signal, said paging signal, and said pilot energies and said page energies and comparing said decision metric to a decision

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threshold and providing a decision signal in response thereto when said erasure signal indicates that said combined carrier signal to interference ratio is approximately above said threshold.

20. (Original) The system of Claim 19 wherein said fifth means further includes means for powering down a receiver associated with said system when said decision signal indicates that said decision metric is less than said decision threshold.

21. (Original) The system of Claim 19 wherein said fifth means further includes means for selectively enabling said fourth means when said decision signal indicates that said decision metric is approximately greater than said decision threshold.

22. (Original) The system of Claim 19 wherein said decision metric D is computed in accordance with the following equation:

$$D = \frac{QP_1 + QP_2}{E_{pilot1} + E_{pilot2}},$$

where QP_1 equals dot_1, $cross_1$, or $dot_1 + cross_1$ and QP_2 equals dot_2, $cross_2$, or $dot_2 + cross_2$.

23. (Original) A dual paging channel receiver comprising:

a receiver for receiving a radio frequency signal and providing a digital baseband signal in response thereto;

a received energy estimator for calculating a first energy associated with said digital baseband signal;

a pilot computation circuit for extracting an estimate of a pilot signal from said digital baseband signal and computing an energy estimate of said pilot signal;

a despreader circuit for extracting a quick paging channel signal component from said digital baseband signal;

a demodulator and combiner for selectively combining said quick paging channel signal component and said pilot signal to yield a decision metric;

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a detector for providing an indication of the presence or absence of an immediately forthcoming page on a primary paging channel of said received signal based on said decision metric.

24. (Original) The receiver of Claim 23 further including means for receiving an processing said forthcoming page in accordance with the IS-95 telecommunications standard in response to said indication.

25. (Original) The receiver of Claim 24 wherein said decision metric includes parameters associated with a first quick paging symbol and a second quick paging symbol of said quick paging channel signal.

26. (Original) A wireless communications device comprising:

first means for receiving a radio frequency signal and providing a digital baseband signal in response thereto and for transmitting radio frequency signals;

second means for calculating a first energy associated with said digital baseband signal provided by said first means;

third means for extracting an estimate of a pilot signal from said digital baseband signal provided by said first means and computing an energy estimate of said pilot signal;

fourth means for extracting a quick paging channel signal component from said digital baseband signal;

fifth means for selectively combining said quick paging channel signal component and said pilot signal to yield a decision metric;

sixth means providing an indication of the presence or absence of an immediately forthcoming page on a primary paging channel of said radio frequency signal received via said first means; and

seventh means for selectively employing said first means, said fourth means, and fifth means to process a subsequent page of a primary paging channel in response to said indication and establishing a traffic channel in response to the processing of said subsequent page.

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27. (Original) A system for determining, via a quick paging signal associated with a quick paging channel, whether a forthcoming page on a primary paging channel should be received and processed comprising:

first means for receiving an electromagnetic signal and providing one or more decision parameters based on a quality of a signal environment through which said received signal propagates and/or based on a value of a first symbol and/or a second symbol of a quick paging channel signal component of said received signal in response to the receipt of said electromagnetic signal and

second means for selectively comparing said one or more decision parameters associated with a first quick paging channel symbol and/or a second paging channel symbol to one or more corresponding predetermined thresholds in response to said control signal and providing a first indication in response thereto, said first indication indicative of whether said forthcoming paging channel should be received and processed.

28. (Original) A method for efficiently employing a quick paging channel signal to determine the presence of a forthcoming primary paging channel signal in a wireless communications system employing a quick paging channel and a primary paging channel comprising the steps of:

calculating a first decision parameter based on a carrier signal to interference ratio associated with said quick paging channel signal and based on a pilot signal;

computing a second decision parameter based on a combination of said quick paging channel signal and said pilot signal based on and energies associated with said pilot signal and said quick paging channel signal; and

indicating, based on said first decision parameter and said second decision parameter, the presence or absence of an immediately forthcoming page message on said primary paging channel.

Claim 29. (Cancelled)

30. (Currently amended) ~~The system of Claim 29~~ A system for interpreting a quick paging channel signal in a wireless communications system comprising:

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first means for analyzing a received signal and a signal environment associated with said quick paging channel to determine if one or more symbols of said received signal are valid and providing a first indication in response thereto and

second means for providing a value indicative of a message included in said quick paging channel based on said first indication and said one or more symbols;

wherein said one or more symbols include a first symbol and a second symbol.

31. (Original) The system of Claim 30 wherein said first means includes means for analyzing said signal environment and providing a parameter indicative of said signal environment via a pilot signal included in said received signal.

32. (Original) The system of Claim 31 further including third means for indicating that said first symbol and said second symbol are unreliable based on said parameter and selectively disabling said second means in response thereto.

33. (Original) The system of Claim 32 wherein said parameter is determined in accordance with the following equation:

$$CSI = \left(\frac{E_{pilot}}{\hat{I}o} \right)_{combined} = \frac{E_{pilot1}}{\hat{I}_{o1}} + \frac{E_{pilot2}}{\hat{I}_{o2}},$$

where CSI and $\left(\frac{E_{pilot}}{\hat{I}o} \right)_{combined}$ represents a combined carrier signal to interference ratio; $\frac{E_{pilot1}}{\hat{I}_{o1}}$ is a pilot energy to interference ratio associated with said symbol; $\frac{E_{pilot2}}{\hat{I}_{o2}}$ is a pilot energy to interference ratio associated with said second symbol; E_{pilot1} and E_{pilot2} represent pilot signal energy associated with said first symbol and said second symbol, respectively; and $\hat{I}_{o1}$ and $\hat{I}_{o2}$ are estimates of the total energy of said received signal associated with said first symbol and said second symbol, respectively.

34. (Original) The system of Claim 32 wherein said second means includes means for selectively calculating the following metric (D):

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$$D = \frac{QP_1 + QP_2}{E_{pilot1} + E_{pilot2}},$$

where QP_1 is either dot_1, $cross_1$, or $dot_1 + cross_1$; QP_2 is either dot_2, $cross_2$, or $dot_2 + cross_2$; E_{pilot1} represents energy associated with said pilot signal that is associated with said first quick paging symbol; and E_{pilot2} represents energy associated with said pilot signal that is associated with said first quick paging symbol.

35. (Original) The system of Claim 34 wherein said second means includes means for comparing one or more of said metrics to one or more predetermined thresholds and providing said value in response thereto.

36. (Original) A system for interpreting a quick paging channel signal in a wireless communications system comprising:

a receiver circuit having an antenna and a receive chain;

a pilot estimation circuit in communication with said receiver;

a total received energy computation circuit in communication with said receiver;

a quick paging channel symbol combiner in communication with said pilot estimation circuit, said total received energy computation circuit, and said receiver; and

a page detector in communication with said quick paging channel symbol combiner.

37. (Original) The system of Claim 36 wherein said receiver further includes a sample Random Access Memory (RAM) connected at an output of said receive chain, an interpolator connected at an output of said sample random access memory, a despreading circuit.

38. (Original) The system of Claim 37 wherein said despreading circuit includes a demodulator; said sample RAM and said interpolator are included in a digital baseband processor; and said pilot estimation circuit includes a pilot estimator in communication with a pilot energy computation circuit.

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